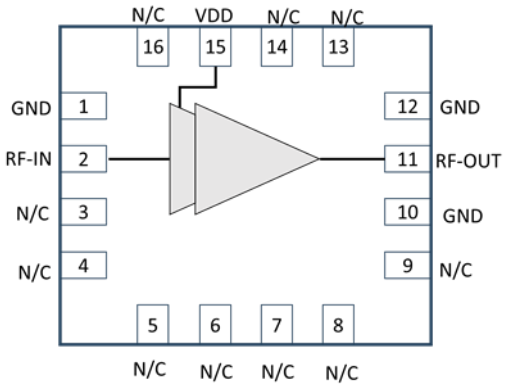
Low Noise Amplifier

PRE-RELEASE DATASHEET RFLN07S

Features:

- RF Frequency: 2 - 7 GHz
- Small signal gain: 27 dB
- Output P1dB: 10.6 dBm
- Saturated Output Power: 17.7 dBm
- DC drain bias voltage: 4 V
- Dc supply current: 47.8 mA
- 0.1um GaAs pHEMT Technology
- Die Size: 1.15 mm *1.02 mm

Functional Block Diagram



Description:

RFLN07S is Two Stage self-biased Low Noise Amplifier operates from 2 - 7 GHz and it is used to drive the high-power amplifier. The amplifier provides 27 dB of small signal gain, the input and output are matched to 50 ohms with off-chip matching Network.

The device is specifically designed for use in 2-7 GHz frequency in Bluetooth, Zigbee, WiFi, IoT and SATCOM Application.

The Technology used to design LNA is 0.1um GaAs pHEMT Process.

Pin Configuration

Pin No.	Pin Name	Description
15	VDD	Drain Bias Voltage
2	RF_IN	RF Input
11	RFOUT	RF Output
1,10,12	GND	Ground
3,4,5,6,7,8,9,13,14,16	N/C	Not Connected

Applications:

- Long-distance radio telecommunications
- Surface ship radar
- Weather radar
- Microwave devices
- Communications

Deliverables:

- Sample Ready Packaged Die
- Test Results
- Product Datasheet

Electrical Specification:

Freq= 2 - 7 GHz, VDD1=VDD2= 4V, ID= 47.8 mA, Zo=50 Ω

Parameters	Test Condition	Units	Typ
Gain	2 GHz	dB	25
	5 GHz		27
	7 GHz		23
Output P1 dB	2 GHz	dBm	
	5 GHz		10.6
	7 GHz		
OIP3 Pin= 1 dBm Δf = 50MHz	2 GHz	dBm	
	5 GHz		21.19
	7 GHz		
Noise Figure	2 GHz	dB	0.7
	5 GHz		0.8
	7 GHz		0.9
Input Return Loss	2 GHz	dB	4
	5 GHz		6.2
	7 GHz		4
Output Return Loss	2 GHz	dB	5.8
	5 GHz		14.9
	7 GHz		9
Operating Bias Conditions			
Drain Current (Id)	-	mA	47.8
Drain Voltage (VDD)	-	V	4
Gate Voltage (VGG)	-	V	-

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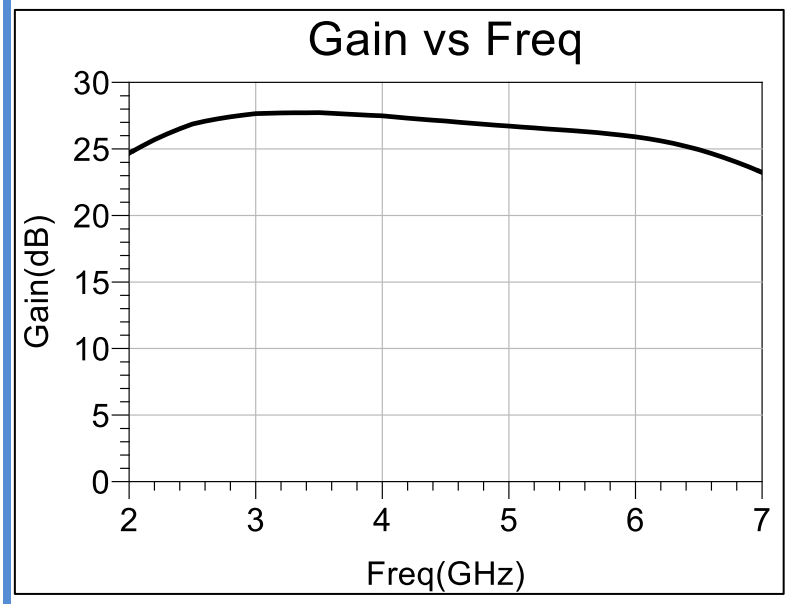
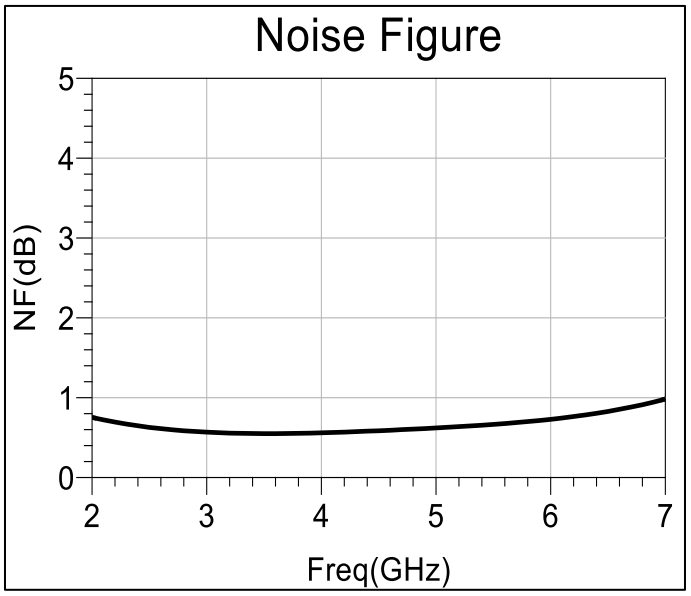
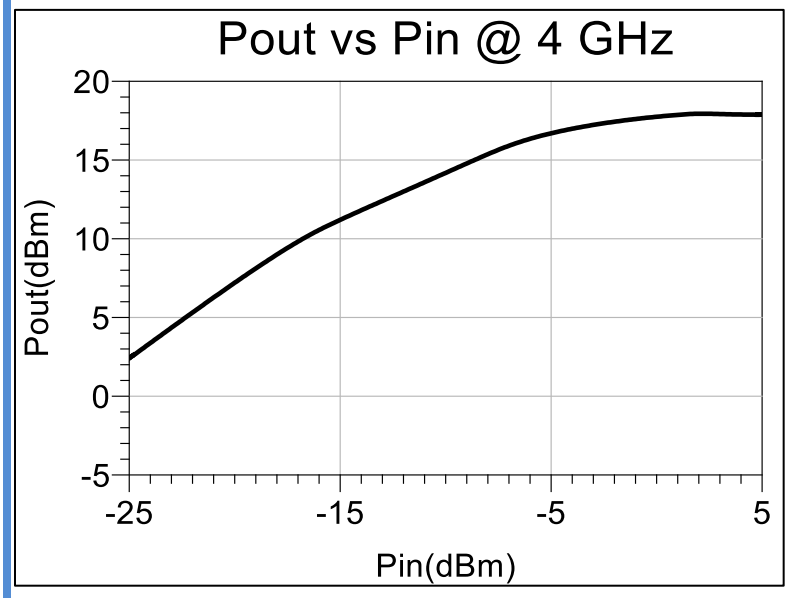
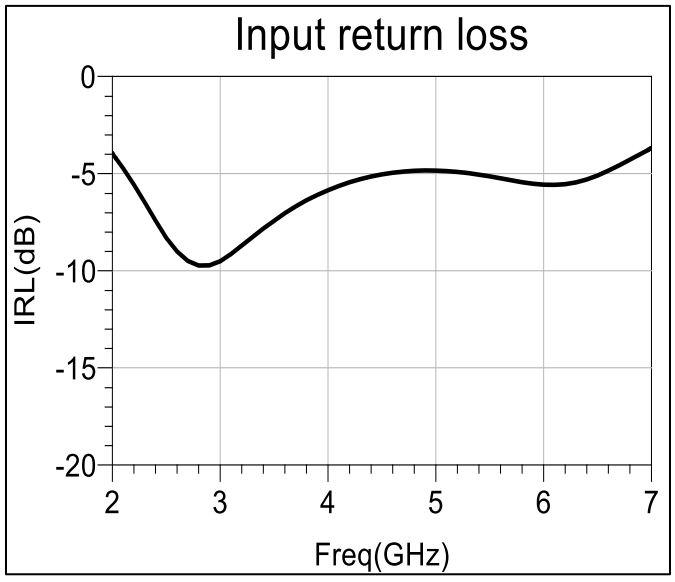
Typical Performance Curves:









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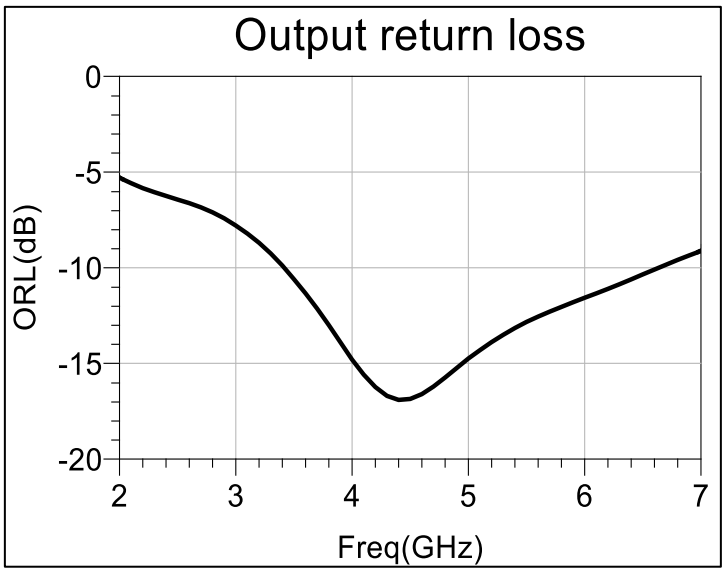

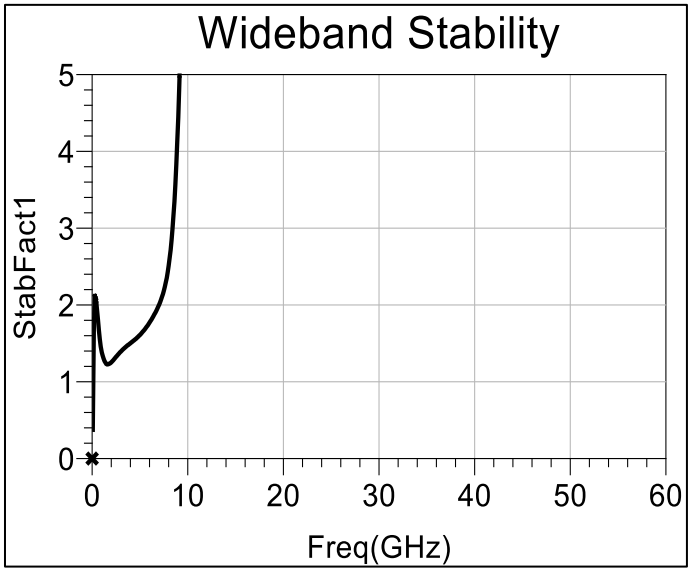

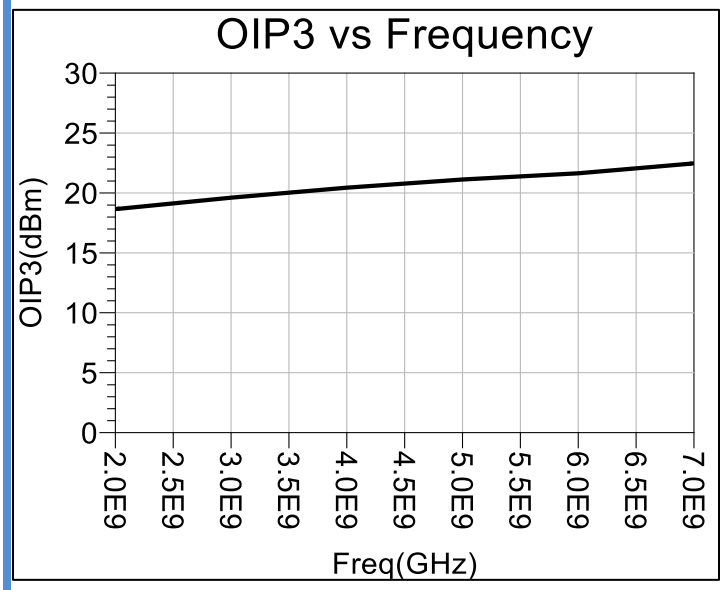

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